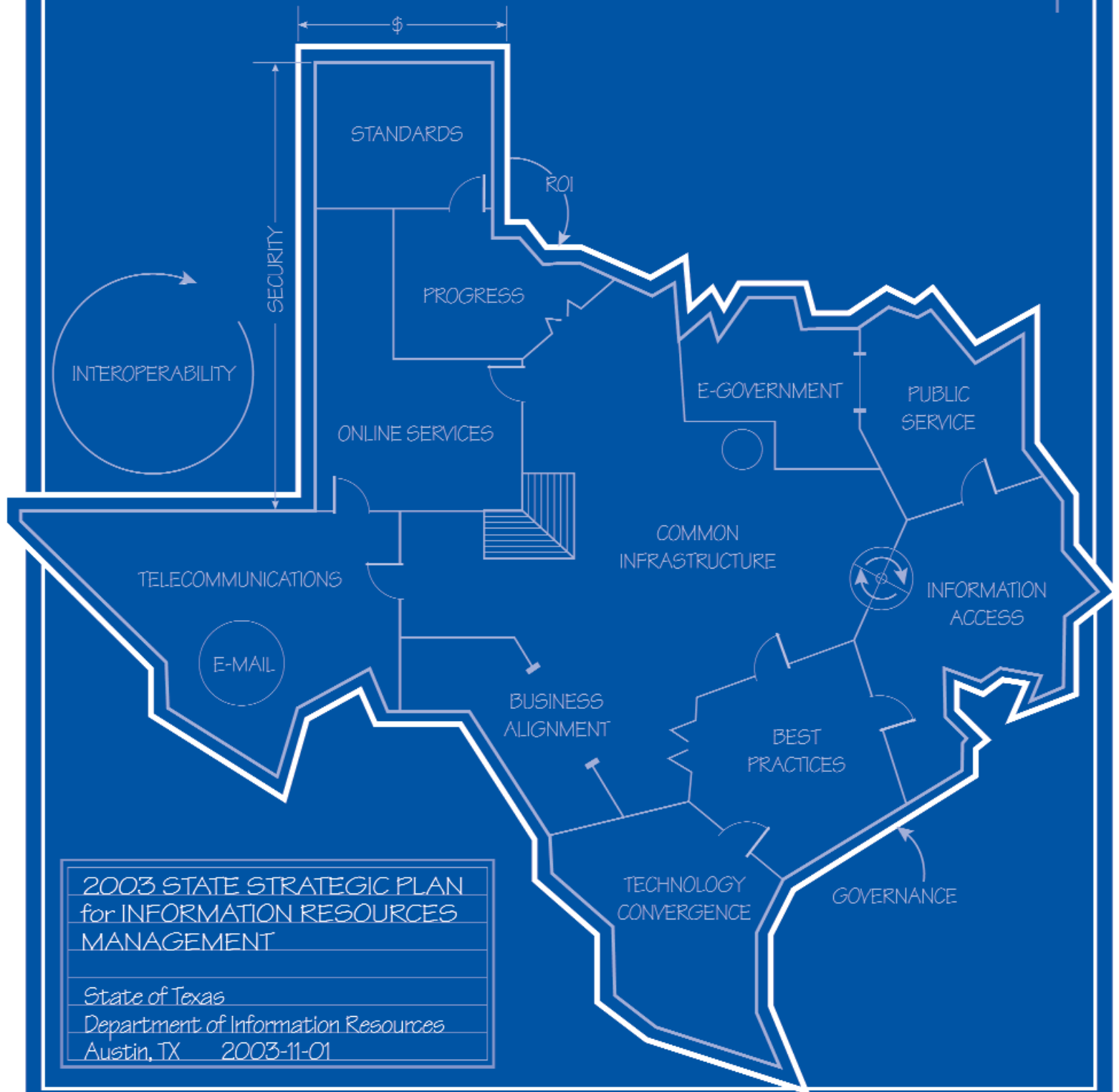


BUILDING  
**a new  
framework**  
FOR THE ENTERPRISE



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Does *IT* matter? A recent article in *Harvard Business Review* argued that *information technology* doesn't matter anymore. IT has essentially become a commodity and therefore should be managed primarily to reduce costs. The author's provocative statements brought about a number of rebuttals arguing that IT must still be planned and managed strategically in order to achieve its promised benefits.

In a time of severe budget restrictions, state leadership is increasingly asking the same kind of questions of Texas *information resources* management. Does *IR* matter? What problems will IR solve? What will IR cost? What are the measurable benefits? Is there a cheaper or easier solution? This plan addresses these questions in the context of three key trends:

1. **IR is becoming ubiquitous.** The ongoing pace of technological innovation ensures that even the most advanced technologies eventually become inexpensive and common. Some areas of IR do evolve into "commodities." This creates opportunities for the state to reduce the cost and complexity of its IR environment by standardizing commodity infrastructure and services across agencies.
2. **IR increasingly delivers government services directly to customers** rather than simply supporting back office functions such as accounting. Further, the convergence of telecommunications providers with content providers such as cable television will ultimately provide access to electronic services to nearly every resident of the state. As a result, IR will be required to provide increasing levels of service to increasing numbers of citizens while maintaining high levels of security and privacy of citizen information.
3. **IR is expected to add value** rather than just add automation. The 78th Legislature enacted laws requiring agency management to justify IR projects based on *return on investment*, and to monitor and report on completed projects to determine if they produced the predicted benefits. The legislature also directed DIR to find opportunities to consolidate services and reduce the cost of IR services.

This State Strategic Plan presents strategies for harnessing these trends and providing answers to important questions from state leadership. It departs from prior, vision-oriented State Strategic Plans by providing more specific planning guidance for state agencies.

In particular, this plan introduces a fundamental, new strategy for management of the state's information resources: *enterprise architecture*. Enterprise architecture (EA) is a methodology that homogenizes and simplifies the IR environment to reduce costs and improve efficiencies and interoperability within agencies and across state government. In addition, EA aligns the use of technology with the business objectives of the enterprise to ensure that it supports state business objectives.

In effect, enterprise architecture is the primary strategy for ensuring that information resources *matter* to state government and provide cost-effective and efficient services. With this as the primary goal, I am pleased to present the 2003 State Strategic Plan, *Building a New Framework for the Enterprise*.



Ed Serna  
Interim Executive Director  
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# executive overview

Every biennium, the Department of Information Resources (DIR) produces the State Strategic Plan (SSP) for managing the information resources of state government. Significant changes were made to the requirements for the SSP during the 2003 legislative session. Although the requirements do not take effect until the next SSP is due, the clear intent of the legislature and executive leadership is for DIR to take a more operational role in statewide IR management.

This plan provides a transition from the previous vision-based format to a more operational focus. It highlights how most IR management issues will be addressed by the *Architecture Components for the Enterprise* (ACE), a statewide initiative to identify key business goals of state government and the information resources needed to achieve those goals. As it matures, the ACE initiative will provide the operational framework for future State Strategic Plans.

This document presents strategies and refers to current DIR rules and guidelines that address issues and concerns raised in the SSP.

## Environmental Assessment

**External factors** that most heavily influence IR planning for the next few years include security and privacy concerns and agency budgets constrained by a slowing economy. At the same time, however, the number of citizens who have access to online government services is increasing.

**Internal factors** that most heavily influence IR planning tend to be systemic. For instance, the decentralized nature of state government creates an environment in which agencies must plan IR in isolation. This results in isolated IR “silos” and inhibits collaboration and sharing of data among agencies. Further, the biennial legislative cycle fosters short-term planning rather than long-term strategies.

Tight budgets have important benefits, however, because they drive agencies to collaborate and share information resources. Collaboration among agencies is increasing, led by TexasOnline and other initiatives summarized in Appendix C. In addition, the increasing involvement of state leadership in IR management and a heightened emphasis on accountability are bringing IR management issues to the forefront. These factors are making it possible to unify strategic technology planning across agencies.

## Issues and Strategies

The most prominent issues for IR management over the next few years include the following:

- **IR Governance.** Management processes must be established within agencies and statewide to simplify and homogenize the IR environment, resulting in lower costs and higher performance of IR assets.
- **Aggregation of IR Procurement.** The state can save money by aggregating IR procurements from multiple agencies to encourage more competitive pricing from vendors. However, this requires the state to stage large procurements at predictable intervals and standardize IR hardware and software.
- **Software Re-use.** Most software licenses can be structured so that agencies can transfer unused or excess licenses to other agencies. State-owned custom software should be shared among agencies whenever possible. To achieve this, a registry for identifying and publicizing such software must be developed.
- **Management of Electronic Records.** Most state documents and data are collected and stored electronically; however, policies and procedures for managing electronic records are still lacking at most agencies.

- **Return on Investment.** Part of business case analysis for IR projects is projecting a *return on investment* (ROI). State agencies need an ROI model for use in developing meaningful project plans and assessments.
- **Security.** For the foreseeable future, security and privacy of information resources will be one of the most prominent concerns for state agencies.
- **Agency Reporting.** Agency Strategic Plans for Information Resources must now be reviewed by DIR. (Guidelines for completing these plans will be developed in the near future, with input from agency information resources managers.)

Strategies for addressing these issues are either in place or under development through ACE, a common statewide IR framework to simplify and align the state's IR infrastructure with its business needs.

## Architecture Components for the Enterprise

An enterprise architecture is a key tool for simplifying IR and aligning technology solutions with the business needs of an organization. An enterprise architecture serves as a common framework to guide IR development and management. The federal government, a growing number of states, and most large businesses are developing enterprise architectures to simplify and homogenize their IR infrastructure and planning.

ACE is a collaborative, interagency initiative sponsored by DIR to develop an enterprise architecture for Texas government.

The basic principle of an enterprise architecture is to determine the business needs of the state and use them to guide the technology choices made by IR management. The ACE initiative provides a

common framework for agencies to use to identify and best deploy their IR assets based on the business needs of the agency and the state. This statewide IR framework allows for more effective technology resource planning and increases possibilities for cross-agency collaboration.

The statewide IR framework that emerges through the ACE initiative will be based on agency input, industry standards and best practices, and DIR guidelines and administrative rules. This framework will improve interoperability, integration, and operating efficiencies among state entities by providing standards for managing and developing state IR systems. The framework will also help identify areas in which additional rules and guidelines are needed. Current DIR rules and guidelines are summarized in *Appendix D*.

The clear identification of the state's business goals will be a key success factor for the ACE initiative. This will require participation by state executive and legislative leadership as well as agency executive directors and staff. Large and medium-sized agencies will also need to develop internal architectures and steering committees to guide IR development within agencies.

As it matures, the ACE framework will serve as the foundation for future State Strategic Plans. It will allow state leadership to identify the highest priority business goals and align IR strategies and projects to achieve those goals.

# introduction

The Department of Information Resources (DIR) publishes the State Strategic Plan (SSP) for Information Resources Management biennially. In 2003, the legislature made significant changes to how the state plans for and manages information resources, including new requirements for the SSP. Although the requirements do not take effect until the next SSP is due, the clear intent of the legislature and executive leadership is for DIR to take a more operational role in statewide IR management. In as many instances as possible, DIR has attempted to reflect this new role in the 2003 State Strategic Plan.

## Developing the Plan

After the close of the 2003 regular legislative session, DIR convened an advisory committee to assist in the preparation of the State Strategic Plan. Committee members represented a wide variety of stakeholders including vendors, the legislature, educational institutions, and information resources managers (IRMs) from all functional groups of state government.

The advisory committee met in June for a one-day strategic planning session. The participants collaborated to identify the environmental factors affecting IR management in the state and to define the vision, mission, and guiding principles for managing the state's IR assets. DIR analyzed the results of the planning session in combination with research from a variety of industry and government sources to determine key trends and issues affecting state agencies and strategies for addressing them.

## Progress since the 2001 SSP

The State Strategic Plan issued by DIR on November 1, 2001, offered a vision for transforming the delivery of government services through the judicious and innovative use of information resources.<sup>1</sup> The plan presented four visionary goals: transformation of government, continuous improvement of information management practices, continuous improvement of information stewardship, and continuous improvement of citizen access and participation.

Since then, the war on terrorism and a slowing economy have constrained the state's progress somewhat. Nevertheless, Texas made some advances toward the goals and objectives in the plan.

- The robust development of TexasOnline has moved the state toward these goals by providing citizens an ever-increasing number of government services online.
- The new ACE (Architecture Components for the Enterprise) initiative offers numerous opportunities to transform government and improve the state's IR infrastructure by implementing a fundamental, new strategy for managing the state's information resources.
- The 78th Legislature gave DIR significant new responsibilities for setting IR standards and managing IR development in the state.
- The Critical Infrastructure Protection Council was established as the operational advisory group for homeland security at the state level. The council will coordinate the flow of information through the governor's office and various state agencies.

The Biennial Performance Report (BPR), issued by DIR on November 1, 2002, assessed progress on the 2001 SSP and recommended legislative action on seven issues.<sup>2</sup> Actions of the 78th Legislature addressed several of the recommendations from the 2002 BPR. Progress on the recommendations is more fully described in *Appendix B*.

## In this Plan

The Information Resources Management Act requires DIR to produce a strategic plan for the statewide management of information resources every two years. The plan assesses and reports on state agencies' IR management practices, current and future IR management technologies and practices, and their potential application to state government.<sup>3</sup>

The 78th Legislature's revisions to the IR Management Act included directing DIR to meet the following new requirements in the SSP:<sup>4</sup>

- Outline a state information architecture;
- Provide information about best IR practices;
- Establish guidelines for state agencies to report in Agency Strategic Plans;
- Identify major issues faced by state agencies related to the acquisition of information resources hardware, software, and services; and
- Identify priorities for return on investment and cost-benefit analysis strategies.

Changes to the structure of the plan and how it is developed and used are detailed in *Appendix A*.

## Section Highlights

The following are highlights of the major sections of the plan.

- *Vision, Mission, and Guiding Principles* describes DIR's vision for how state information resources serve the needs of state citizens and presents the basic principles that motivate the department's planning decisions and actions.
- *Environmental Assessment* describes factors affecting IR management in Texas. State government faces several major challenges due to its size, diversity, and decentralized structure.
- *Issues and Strategies* expands on some of the factors discussed in the *Environmental Assessment*. It briefly describes what DIR and other agencies can do and are doing to overcome current challenges.
- *Architecture Components for the Enterprise* introduces and provides an overview of the ACE initiative, an ambitious and ongoing program to develop an enterprise architecture for managing state information resources. Participants in the initiative are collaborating to identify the business goals of state government and develop a technical infrastructure to support and achieve those goals.
- *Appendix A* describes how the SSP is developed and executed.
- *Appendix B* outlines the state's progress on issues identified in the 2002 BPR.
- *Appendix C* describes statewide projects and initiatives that are currently underway to address some of the challenges faced by the state.
- *Appendix D* offers a reference list of state IR rules and guidelines.

# vision, mission and guiding principles

## Vision

Judicious use of technology gives Texans widespread and easy access to government services regardless of barriers or boundaries.

## Mission

To promote more effective, accessible, and open government by fostering cost-effective, secure, integrated, and innovative tools and practices in the management of information resources.

## Guiding Principles

Guiding principles center on the philosophy that the state's information resources are among its most valuable assets and must be managed strategically.

- Technology should be used in ways that redesign, improve, and add value to government operations.
- Management of technology should focus on infrastructures, policies, and procedures needed to ensure effective and efficient use of statewide information resources.
- Management of technology should give highest priority to safeguarding information assets throughout their life cycles.

- Technology should support broader, easier, and faster access to government information and services regardless of its location or the location of citizens.

These principles recognize the increasing influence of a technically savvy populace and the convergence of computing and communications technologies. This convergence is extending electronic access to government services to increasing numbers of citizens.

While acknowledging the barriers of decentralized IR administration and agency information silos, the guiding principles focus on overcoming these obstacles to provide more accurate, timely, and secure data and services, and to provide them more efficiently and effectively.

For instance, identical data needed by several agencies should be collected only once and shared among appropriate agencies. In addition, services common to all agencies such as e-mail and network support should be consolidated and administered centrally to eliminate duplication of efforts and other inefficiencies.

Finally, the guiding principles are embodied in a new, collaborative initiative among agencies to build a statewide framework to simplify and standardize the state's basic IR infrastructure, services, and management. The initiative is called ACE: Architecture Components for the Enterprise.

The ACE initiative is a collaborative, interagency effort to define an enterprise architecture for state government. An enterprise architecture is a comprehensive set of rules and guidelines an organization uses to develop IR infrastructure and projects.

As the statewide IR framework matures, it will align the state's information resources with the state's business processes. The alignment will reduce the amount of effort and expense agencies expend developing and maintaining "utility" services such as e-mail. A more unified statewide IR framework allows data and services to be shared more easily among agencies.

- THE VISION PRESENTS AN INSPIRING PICTURE OF THE PREFERRED FUTURE OF STATE GOVERNMENT IN TEXAS.
- THE MISSION STATEMENT IS A CONCISE STATEMENT OF THE BASIC PURPOSE OF IR MANAGEMENT IN STATE GOVERNMENT.
- THE GUIDING PRINCIPLES ARE EXPRESSIONS OF THE STATE'S IDEALS UNDERLYING ITS MANAGEMENT OF INFORMATION RESOURCES.



# environmental assessment

The environmental assessment evaluates trends, conditions, opportunities, and obstacles that must be considered in developing the State Strategic Plan. The assessment identifies internal and external factors most likely to affect agencies' plans for the management of information resources.

## External Assessment

External challenges arise primarily from security and privacy concerns and from budget constraints brought on by a slowing economy. External opportunities are dominated by industry trends and the pace of technology change. Such changes compel state government to raise its standards of service to meet public expectations for state services.

### External Challenges

External challenges are driven primarily by industry trends, such as the pace of technology change, and by events outside the control of state government. The war on terrorism and the slowdown of the economy continue to be the primary factors affecting IR planning in the state.

- **Security.** Public demands for IR security and privacy have intensified following highly publicized security breaches and terrorist attacks. The primary challenge to state agencies is to maintain a focus on continually improving the security of state information resources. The state must overcome obstacles to interoperability to ensure that threat information can be communicated among all levels of government across a wide range of devices. To aid agencies in protecting the state's information assets, the 78th Legislature enacted law requiring IR security personnel to pass a criminal history background check before being hired.
- **Budget constraints.** A slowing economy affects both vendors and project funding. Reductions in IR spending over the past biennium have pushed some vendors into bankruptcy. Such bankruptcies jeopardize agency investments in a vendor's hardware, software, and services. Budget constraints and reductions in staff are

forcing agencies to postpone or scale back some projects, delaying the return on investments in IR.

### External Opportunities

External opportunities are factors or situations outside the control of state government that can be exploited to the benefit of the state.

- **Advances in technology** drive down IR costs and make technology ubiquitous and accessible for increasing numbers of citizens. Key advancements offer state agencies the following opportunities:
  - Emergence of common standards increases interoperability and potential for collaboration among agencies;
  - User authentication offers new ways for agencies to secure citizen and government data;
  - Data mining provides ways for agencies to extract more information and utility from existing databases;
  - Electronic procurement will decrease costs of procuring goods and services and improve agencies' ability to track expenditures; and
  - Global authentication drives increased citizen participation by enabling a single sign-on.
- **As the number of technologically literate citizens continues to grow**, agencies are finding it easier and more cost-effective to put services and information online. A statewide IR architecture is key to ensuring that agencies are positioned to make the most of this opportunity. Through the ACE initiative, DIR will enhance existing standards and develop a body of best practices to guide agencies in developing online services.
- **The slowing economy** and budget constraints are driving agencies toward collaboration and efficiency, and, to some extent, these forces are overcoming the fragmented planning that results from the decentralized nature of Texas

government. The ACE initiative provides a forum where such collaboration and standardization are among the main goals.

### Internal Assessment

Internal factors that challenge agency IR managers result from the unique characteristics of Texas government: biennial legislative sessions and decentralized agencies. A promising set of internal opportunities is appearing to address the challenges, including the ACE initiative, the rising involvement of state leadership in IR management, and the increase of collaboration among agencies.

### Internal Challenges

Some of the primary internal challenges faced by state government arise from decentralized and highly autonomous agencies and a biennial planning and budgeting cycle.

- **Long-term strategies** are hindered by short-term planning structured around the biennial legislative cycle. This is particularly true of infrastructure development programs that require more than two years to complete or to realize return on investment. Projects must be divided into phases that provide deliverables within shorter timeframes than traditional IR development. The State Auditor and DIR will develop ROI guidelines for phasing long-term projects, which will become part of ACE guidelines and best practices.
- **Decentralized government** tends to foster fragmented planning and isolated silos of information. Federally supported or mandated programs also tend to intensify stovepipe development because of the restrictions placed on the use of resources. Programs from separate state and federal agencies are rarely developed with a perspective of sharing resources with other programs. In fact, by law or regulation, some programs actually prohibit the use of their resources in other state or federal programs.

Developing interagency projects that specifically promote interoperability is an effective strategy to overcome isolationism. The ACE initiative will address many of these issues by developing guidelines and best practices for infrastructure and project planning. In some cases, legislation at the state and federal level may be needed to address some parts of this issue.

- **Agency-level funding** can impede IR collaboration among agencies. For instance, an interagency project may rely on funding being approved for all agencies involved in the project. If any agency's part of a project's funding is not approved, the entire project may not be able to continue even though ROI for the state as a whole may be significant.
- **Budget constraints** are increasing the demand for performance metrics and accountability. Agencies are being pushed to ensure that IR projects produce a positive return on investment. To aid in agency efforts, the State Auditor and DIR will develop ROI guidelines that will become part of ACE guidelines and best practices.
- **The lack of common project management methodology** with which to communicate the purpose, benefits, status, and progress of IR projects makes it difficult for agency and state leadership to properly evaluate project performance and make appropriate funding decisions.

### Internal Opportunities

Seven internal opportunities or capabilities have been identified as important to IR planning during the fiscal 2004–05 biennium.

- **ACE, the enterprise architecture initiative** sponsored by DIR, will standardize many IR components, reducing the complexity of the state IR environment and improving interoperability. The initiative will also provide direction and tools for agencies to develop agency-level architectures that are aligned with the statewide enterprise architecture.

- **Increasing involvement of state leadership** provides visible support to statewide IR management initiatives. Such high-level support is seen as the key to fostering collaboration among agency executive directors — collaboration that is essential to successfully establishing an enterprise architecture for the state. Industry analysts are virtually unanimous in claiming that generating a Business Architecture is the most difficult part of EA and continuous high-level and highly visible support will be required for the ACE initiative to be successful.
- **Collaboration among agency IRMs and agencies** is increasing not only out of the necessity to meet budget constraints, but also as the result of prominent interagency successes such as geographic information systems. Agencies seeking additional opportunities for collaboration are participating in the ACE initiative, where they are working together to determine state-level operational standards to support the efficient and cost-effective provision of government services.
- **TexasOnline** is highly regarded by the legislature and provides an example of a successful collaboration to provide an enterprise-wide IR platform and applications. Lessons learned from this venture can serve as best practices and blueprints for other collaborative IR efforts.
- **Homeland security** is another force driving collaboration. In the war on terrorism, major efforts among federal, state, and local governments have been directed toward the sharing of threat information. The 78th Legislature created the Critical Infrastructure Protection Council to advise the governor on the development and coordination of a strategy for protecting the state's critical infrastructure, which includes the state's information technology assets, systems, and functions.<sup>5</sup> The council is key to the execution of the governor's homeland security strategy and will be instructive for agencies that must overcome privacy and security issues in sharing sensitive data.
- **Consolidating IR procurements** has the potential to provide significant cost savings to the state. A key component of the ACE initiative involves taking an inventory of state IR assets to determine how standardization should be applied to various elements of the architecture. Agencies are urged to begin planning for such inventories for use as the basis for instituting asset management programs.
- **Consolidating common IR services and utility functions** such as e-mail, network management, and Web hosting can provide significant savings for the state while allowing agency IR management and staff to focus on specialized IR components that best support their specific business needs.

# Issues and strategies

The issues below were developed from findings of the State Strategic Plan Advisory Committee, from laws enacted by the 78th Legislature, and from issues remaining from prior State Strategic Plans and Biennial Performance Reports. Descriptions of the issues are accompanied by agency and statewide strategies to address them. Eventually, most of these issues will be subsumed and addressed through the ACE initiative as it develops the structure and processes for establishing enterprise rules and guidelines for the management of the state's information resources.

## ISSUE IR Governance

Texas government is a large, decentralized organization of state agencies and institutions, all of various sizes, compositions, missions, and constituencies. This type of organizational model makes it difficult to coordinate IR planning, procurement, and management at the statewide, or *enterprise*, level. Industry analysts recommend that such organizations establish an IR governance structure that is responsible for creating an enterprise architecture (EA) to guide the development and management of information resources throughout the organization. A well-designed EA controls the complexity of the IR environment and helps avoid redundant, overlapping, and occasionally incompatible systems and services.

ONE ANALYST GROUP NOTES, "A KEY PART OF THIS EFFORT IS ENSURING THAT BUSINESS LEADERS UNDERSTAND THE NEGATIVE IMPACT — IN BOTH COST AND COMPLEXITY — THAT THE ENTERPRISE WILL FACE IF IT FAILS TO FUND AND ADHERE TO THE ARCHITECTURE NEEDED."

HOWEVER, AN [ENTERPRISE ARCHITECTURE] ALSO REQUIRES AN ENTERPRISE BUSINESS ARCHITECTURE (STRATEGY) ON WHICH THE EA WILL BE BUILT. THE AUTHORS CONTINUE, "A BUSINESS ARCHITECTURE SPECIFIES...HOW THE BUSINESS VIEWS ITS FUTURE — HOW IT EXPECTS TO SURVIVE AND GROW."

— GARTNER GROUP<sup>6</sup>

## STRATEGY

Strategies for addressing IR governance include the following:

- Through the ACE initiative, DIR has established an executive steering committee to guide development of an enterprise architecture for the state. The initiative is described more fully later in this plan. Members of the ACE Steering Committee include IRMs representing agencies from all major functions of government.
- The foundation of ACE is a business architecture that describes the overall business strategy of the state. The business architecture will guide the ACE Steering Committee in setting priorities for the development of statewide IR rules and guidelines. As ACE is developed, agencies will begin to use it as a blueprint to guide and refine the development of their internal agency architectures.
- Each large or medium-sized agency, or functional group of smaller agencies, should establish a steering committee to formulate the underlying business architecture upon which the technical architecture of the agency or functional group will be built.

Most large agencies already have some form of executive council or steering committee to set priorities for IR development and management. For instance, the Health and Human Services Commission acts in this capacity for all health and human services agencies under its purview.

## ISSUE Aggregation of IR Procurement

The SSP Advisory Committee recommended that the state aggregate more of its IR procurements to get better discounts from vendors. This recommendation included reducing the number of vendors who supply the resources, which would enable the selected vendors to give larger discounts for greater purchasing volumes.

Several factors complicate the aggregation of IR procurements.

- Agencies make procurements at irregular and unpredictable intervals. To aggregate the largest quantities, agencies would have to make procurements on predictable intervals, for instance, quarterly.
- Agencies do not buy the same brand of equipment. For aggregation to be effective, agencies would have to standardize on one or two vendors for commodity items such as personal computers and printers.
- Many agencies are exempt from buying from DIR contracts. For instance, universities are not required to procure from DIR contracts. Agencies are required to buy certain commodity software through DIR contracts; however, no agency is required to buy hardware through DIR contracts.
- Financing methods differ. Some agencies use seat management to provide desktop computers and supporting peripherals, making them an *operating expense*, while other agencies take ownership of desktop equipment as a *capital expenditure*.
- The procurement environment is becoming very confusing. With the demise of the Qualified Information Systems Vendor program, any vendor can sell IR hardware and software to state entities through the catalog purchase program.

## STRATEGY

Strategies for aggregating IR procurement include the following:

- DIR should develop statewide contracts for hardware and peripherals that it determines to be *commodity items*, similar to the software contracts DIR currently provides. DIR would establish standard configurations for commodity IR hardware. Agency IRMs or other subject matter experts would specify which of the

standard configurations are appropriate for their organizations.

- DIR should offer *buying windows* at quarterly or other intervals, in which DIR will pool agency procurements to achieve quantities large enough to stimulate competitive bidding.
- Agencies should be required to procure from DIR hardware contracts. Agency exemptions could be allowed if an agency can demonstrate better value through other channels. The exemption should follow ROI standards developed by the State Auditor and DIR.
- Agencies should avoid developing, managing, or hosting utility services such as e-mail, network management, and Web services. Agencies will be instructed to include information on their inventory of IR assets in their Agency Strategic Plans. DIR will evaluate the inventories to identify opportunities for IR asset consolidation.
- Agencies should track IR assets. DIR recommends that agencies institute policies and procedures to track all IR assets. Part of the ACE development process will include providing regular inventories of IR hardware and software assets. This will enable DIR to improve the state's procurement efficiency.

Current DIR rules and guidelines for commodity software procurement, software management, the sale and transfer of hardware and software, and open source software are referenced in *Appendix D*.

## ISSUE

### Software Re-use

Revisions to the IR Management Act require DIR to identify "opportunities to re-use computer software code purchased with public funds" as part of a broader strategy to make procurement of IR technologies more efficient.<sup>7</sup>

Software covered by this strategy fall into three general categories:

- Intellectual property owned by the developer or vendor,
- Intellectual property owned by the state, and
- Intellectual property residing in the public domain or considered *open source*, but modified for use by a state entity.

### STRATEGY

Strategies for re-using software include the following:

- State agencies that procure software licenses should include language in the contract that allows them to transfer ownership of the software to other state agencies. Such provisions are already included in major commodity software contracts through DIR, such as those for Microsoft products.
- A registry will be developed of surplus transferable software available for exchange among agencies. All state entities will be able to use the registry to exchange surplus software licenses or state-owned software rather than buying new licenses.

Agencies in possession of open source software will be responsible for the appropriate and legal distribution of it through the registry.

- Best practices will be developed through the ACE initiative for managing software portfolios, including inventorying and tracking state-owned intellectual property and vendor-owned software. The software registry or its derivatives will be part of these practices. Policy and procedure for managing open source software used by the state will also be developed through the ACE initiative.

Current DIR rules and guidelines for the sale and transfer of hardware and software, including open source software, are referenced in *Appendix D*.

### ISSUE

## Management of Electronic Records

Electronic transactions and digital information pervade government activities. Most of the state's information resides within individual agencies' information systems. E-mail, instant messaging, Web content, and document and image management often form isolated silos of information within an agency. Data is not easily located or shared within such silos or with other systems.

Although data integration is an important goal, information consolidated from numerous resources can illuminate new relationships among the data, which may be *beneficial* or *harmful* to individual citizens. Thus, it is increasingly important for agencies to be vigilant in protecting personal privacy.

According to META Group, storage requirements make up 12 to 15 percent of the total information technology budget.<sup>8</sup> Even though the cost of storage hardware continues to decrease, the cost of managing and maintaining the equipment is increasing. Developing and adhering to a statewide storage architecture could reduce costs and increase government accountability.

Vendors are beginning to consolidate content and storage management systems.<sup>9</sup> Because electronic records management is a subset of content management, technological solutions will begin appearing soon. However, until affordable systems arrive, agencies and universities need to combine knowledge and resources to solve the problem of capturing, classifying, storing, retrieving, and destroying records according to state law.

### STRATEGY

Strategies for addressing electronic records management issues include the following:

- The Records Management Interagency Coordinating Council (RMICC) is working with agency and university records management officers, information resources managers, and

executive directors to collect information about the status of electronic records management in their organizations. RMICC will analyze this information to identify challenges and provide a baseline for determining future improvements.

- An interagency work group formed under the ACE initiative has begun developing guidelines for implementing electronic records management under various scenarios, and will possibly suggest new rules and publish best practices as recommended by RMICC.
- *Consortia projects* (electronic government projects involving multiple state agencies and designed to establish common information resources infrastructure)<sup>10</sup> are being considered to address some of the issues in this area such as consolidation of e-mail services.

Current DIR rules and guidelines for the management of e-mail records and for document interchange are referenced in *Appendix D*.

## ISSUE

### Return on Investment

Determining the benefits of a proposed project requires an understanding of the business needs of the organization and typically entails the development of a business case for the project. In developing a business case, it is necessary to identify the business requirements for the project and to quantify the project's expected benefits. If the organization has quantified business goals and is able to measure its costs and assign value to the expected benefits, the ROI can be relatively easy to determine. However, if the goals are not quantified, the organization will need to leverage industry benchmarks to determine the ROI.

Data required to calculate a project's ROI include:

- Revenues due to new or improved services;
- Revenues due to additional business or increased customer satisfaction;
- Reduced costs due to process improvements and increased productivity;
- Reduced costs of operations;
- Resources (labor and other costs) required to perform the project;
- Hardware, software, equipment, services, and maintenance; and
- Training, travel, and administrative costs.

Project benefits should include both *tangible* (quantifiable cost savings and productivity savings) and *intangible* (social benefits, customer services, legal, and organizational) aspects. Project costs must consider both recurring and non-recurring costs required to develop and implement the project as well as to support and maintain ongoing operations.

ROI analysis must consider the value of the project compared to other projects and alternative uses of the resources. However, ROI should not be the single criterion for approving a project. ROI alone does not capture benefits typically documented in a business case, such as organizational strategy, customer satisfaction, and partner relationships.

## STRATEGY

The following strategy is recommended for ROI:

- DIR, in cooperation with the State Auditor, is developing an ROI model to be used for project planning and evaluation. This model will become part of the ACE initiative's rules and guidelines for project management.

The *Internal Quality Assurance Guidelines*, published by DIR and the State Auditor, provide insight into cost-benefit analysis.<sup>11</sup> See *Appendix D* for a comprehensive list of current DIR rules and guidelines.

### ISSUE

## Security

Security was a high-priority topic during the 2003 legislative session. Twelve security-related bills were filed, most of them relating to protection of infrastructure and emergency response plans. Key legislation was enacted that established the Critical Infrastructure Protection Council. The council will serve as the operational advisory group for homeland security at the state level and will coordinate flow of information, response, and recovery through the governor's office and the various state agencies. For the foreseeable future, security will continue to be one of the highest priorities of IR management.

### STRATEGY

The following strategy is recommended for addressing security issues:

- A standard security architecture will be developed as a key component of the ACE initiative. The architecture will include a proposed security infrastructure and enhanced rules and guidelines. The architecture will be a major driver of interoperability among agencies by improving and standardizing security infrastructure.

DIR's current security-related rules and guidelines, including those for disaster recovery and business continuity planning, and templates for security policies are referenced in *Appendix D*.

### ISSUE

## Agency Reporting

Revisions to the IR Management Act by the 78th Legislature require state agencies to submit their Agency Strategic Plans for Information Resources to DIR and the Quality Assurance Team for review. Content requirements for the ASPs have also changed, and DIR is required to establish guidelines instructing agencies how to report the following information:

- The agency's progress related to the strategic direction of the state;
- Information on the agency's IR assets necessary to evaluate opportunities for information technology consolidation;
- The agency's progress toward implementing electronic government projects; and
- The agency's ROI for a project and the project's cost-benefit model.

### STRATEGY

Strategies for reporting in Agency Strategic Plans include the following:

- Reporting instructions for Agency Strategic Plans are usually issued in the calendar year following a legislative session. DIR will consult agency IRMs and the Quality Assurance Team to formulate instructions for the upcoming planning cycle. The instructions will be issued as early as possible in 2004.
- An IR asset inventory will be conducted as part of the strategic planning cycle. Agencies are encouraged to use such inventories to institute asset management programs. As noted in the 2002 Biennial Performance Report, "Industry sources indicate that applying best practices in asset management can save more than five percent of an organization's IR budget in the first year of implementation, and five to ten percent annually thereafter."<sup>12</sup>

In future planning cycles, rules and guidelines established through the ACE initiative will provide the basis for most reporting required in Agency Strategic Plans.



# architecture components for the enterprise

## Introduction to Enterprise Architecture

Information resources technology has become a mainstay for delivering state services and has become a major item in the state budget. For the last four years, Texas government has spent more than \$1.5 billion per year for information resources.

As noted earlier in this report, the decentralized nature of Texas government fosters agency-centric planning and isolated silos of information within agencies. In addition, the rapid pace of technological change strains agencies' IR planning and budgeting and constrains coordinated IR planning and cooperation across agencies. The result is an overly complex IR infrastructure within state government. This complexity drives up the costs of IR and limits the potential benefits of coordinated efforts among agencies.

Texas, among other states, is making government more efficient by simplifying and homogenizing IR infrastructure and planning through enterprise architecture. Developing an enterprise architecture is a key tool for leveraging existing technology and aligning technology solutions with the business needs of the state and agencies.

The new initiative for developing an enterprise architecture for state government in Texas is called ACE: Architecture Components for the Enterprise.

A broad range of agencies are participating in the ACE initiative. Because of this collaborative effort, the state can develop a consensus regarding technology standards without sacrificing agency business innovation. The expectation is that increasing statewide standardization will lead to technology and project consolidation and collaboration, sharing of technology assets, and enhanced partnerships among agencies and vendors. Ultimately, ACE will facilitate improved business planning and more efficient use of technology resources across the state.

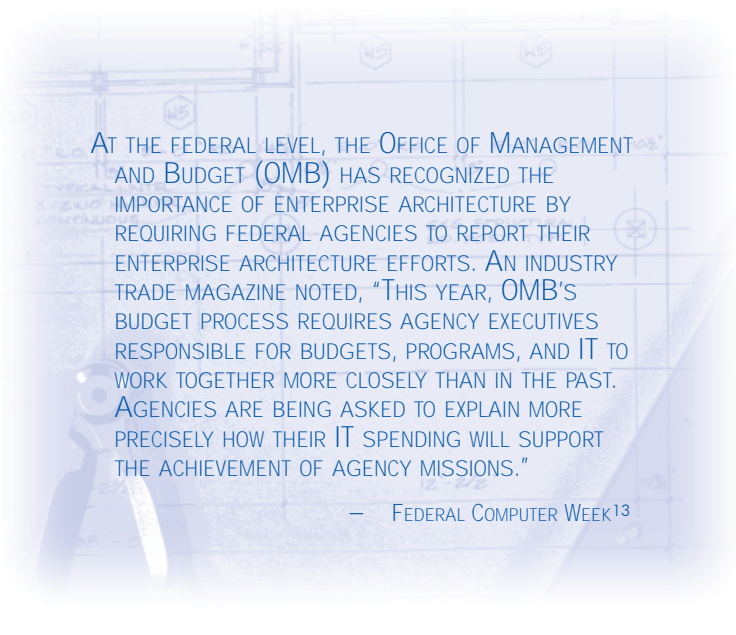
## ACE Overview

### Vision

Standardized IR infrastructure and basic IR services reduce operating costs among all agencies and allow agency IR managers to focus more resources on serving core agency business needs. New systems and programs developed according to ACE standards allow data and services to be shared among agencies as needed, reducing redundant and incompatible systems. Existing systems are upgraded to new standards when doing so will provide measurable benefit to the state. State leadership can more easily propose programs and services that span agencies and business lines with more complete understanding of costs and the impacts on IR management.

### Mission

The mission of the ACE initiative is to develop a framework of standard IR infrastructure and basic services based on the business needs of state government. The initiative will produce a body of rules and guidelines to guide agencies in developing their internal architectures. This body of rules and guidelines will be continually refined to ensure that the state's information resources are interoperable and optimized to serve the business needs of state government.



AT THE FEDERAL LEVEL, THE OFFICE OF MANAGEMENT AND BUDGET (OMB) HAS RECOGNIZED THE IMPORTANCE OF ENTERPRISE ARCHITECTURE BY REQUIRING FEDERAL AGENCIES TO REPORT THEIR ENTERPRISE ARCHITECTURE EFFORTS. AN INDUSTRY TRADE MAGAZINE NOTED, "THIS YEAR, OMB'S BUDGET PROCESS REQUIRES AGENCY EXECUTIVES RESPONSIBLE FOR BUDGETS, PROGRAMS, AND IT TO WORK TOGETHER MORE CLOSELY THAN IN THE PAST. AGENCIES ARE BEING ASKED TO EXPLAIN MORE PRECISELY HOW THEIR IT SPENDING WILL SUPPORT THE ACHIEVEMENT OF AGENCY MISSIONS."

— FEDERAL COMPUTER WEEK<sup>13</sup>

## Opportunities

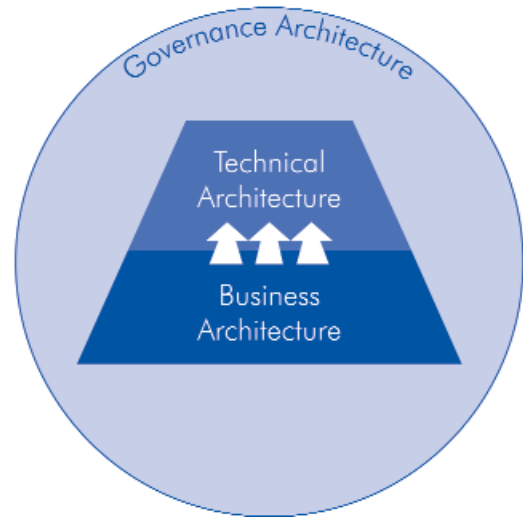
Once developed and implemented, a statewide IR framework will benefit the state by

1. Ensuring that planned IR investments are aligned with the state's business needs and priorities;
2. Removing technology roadblocks for business functions that span two or more agencies; and
3. Improving opportunities for consolidating procurements, services, and projects to achieve cost savings, developing a sound set of IR standards to promote interoperability and integration, developing rules and guidelines for streamlining processes to develop more effective and efficient government operations, and identifying areas in which additional rules and guidelines are needed.

The 78th Legislature recognized the importance of such an initiative by mandating that DIR develop a statewide IR architecture.<sup>14</sup>

The initial statewide framework defined under ACE will serve as a roadmap for agencies to develop and optimize their internal architectures to meet specific business needs. A primary purpose of the ACE initiative is to produce guidelines and templates to assist the agencies in this process. A complete version of the initial framework is expected to be in place by September 1, 2004.

Figure 1: Overview of ACE Components



## Major Components of ACE

ACE consists of three primary components:

- The **Business Architecture** identifies the state business goals that drive technology resource usage in state government.
- The **Technical Architecture** provides the structure and coordination for technology resource implementation and support.
- The **Governance Architecture** oversees the coordination between the Business and Technical Architectures.

The relationship of the ACE components is illustrated in Figure 1.

## Governance Architecture

Governance Architecture is administered through the ACE Steering Committee. As shown in Figure 2, the committee is composed of state government leadership, agency executive directors, and other stakeholders, under the leadership of the state's CIO. The CIO determines whether a recommendation made by the steering committee will be referred to the DIR board for consideration and adoption as an administrative rule.

RESEARCH HAS SHOWN THAT ENTERPRISE ARCHITECTURE LEADS TO GREATER EFFICIENCIES IN USE OF IT ASSETS BY REDUCING BUSINESS INTEGRATION COSTS, STREAMLINING INFRASTRUCTURE NEEDS, AND PREDICTS THAT ENTERPRISE ARCHITECTURE WILL BECOME ONE OF THE MOST CRITICAL FACTORS IN RISK MANAGEMENT.

— GARTNER GROUP<sup>15</sup>

Figure 2: Governance Architecture



Agencies represented on the current committee include the Health and Human Services Commission, Texas Education Agency, Office of Court Administration, Office of the Attorney General, Department of Public Safety, Texas Workforce Commission, Texas Department of Transportation, Texas Railroad Commission, Texas Department of Insurance, Department of Human Services, and Board of Nurse Examiners.

The steering committee began meeting in the fall of 2003 to review progress made in the technical subcommittees, such as recommenda-

tions for new rules or guidelines. The committee will set its priorities in line with those of the legislature and the identified business needs of the state.

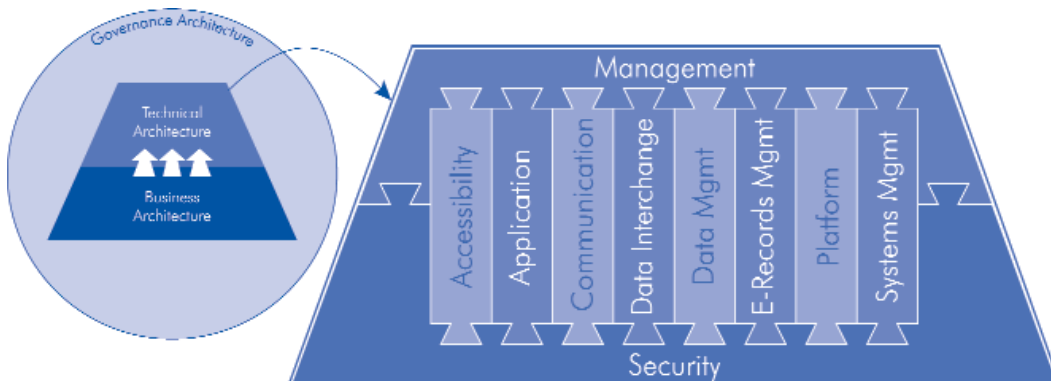
### Technical Architecture

Technical Architecture, shown in Figure 3, is divided into ten domains: Management, Security, Accessibility and Usability, Application, Communication, Data Interchange, Data Management, E-Records Management, Platform, and Systems Management.

A domain represents a logical grouping of technology, the components of which can be specified by best practices, rules, standards, or guidelines. Although each domain can stand alone as a practical area of knowledge, the Management domain and the Security domain are recognized as having special interconnectivity with the others.

Each technical domain has a subcommittee of subject matter experts to oversee and guide the development of the components within the domain. DIR staff members have been assigned to support each subcommittee. Each subcommittee is responsible for composing a clear definition for the domain and its components to aid in the development of rules and guidelines. The ACE Steering Committee will periodically review the progress within each technical domain and consider the adoption of any recommendations from its subcommittee.

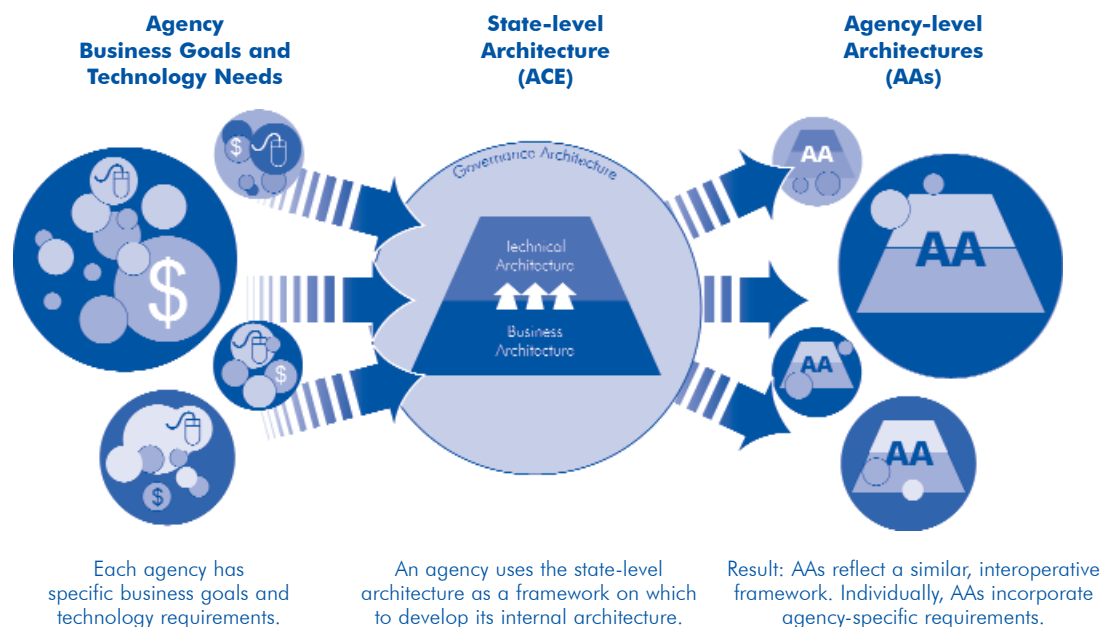
Figure 3: Technical Architecture Domains



Some technical domain definitions are under development in subcommittees. As a result, the following domain descriptions may differ slightly from the final definitions assigned by each subcommittee.

- The **Management Domain** covers the procedures, practices, and methods for managing projects, risk, and other non-technical aspects of IR.
- The **Security Domain** encompasses the protection of information and information systems from unauthorized access, use, disclosure, disruption, modification, or destruction in order to provide confidentiality, integrity, and availability.
- The **Platform Domain** defines the host technologies, equipment, standards, and policies for hardware, software, and services that support the business and technical requirements of the state user community.
- The **Communication Domain** defines all aspects of the communication infrastructure for a networked environment, including voice, data, and video services.
- The **E-Records Management Domain** encompasses the application of records management principles to the creation, classification, use, maintenance, protection, disposition, and preservation of electronic records and electronic records systems.
- The **Application Domain** defines the principles, standards, and guidelines that support the purchase, development, support, and retirement of software-based applications.
- The **Data Interchange Domain** defines the policies, rules, standards, guidelines, and technologies that support interchange of data and services between applications on the same platform and applications on different platforms and between agencies.

Figure 4: The Enterprise and Agency Architectures



- The **Accessibility and Usability Domain** covers policies and processes to ensure online services are accessible by the public.
- The **Data Management Domain** defines the procedures, practices, methods, and software used to manage data.
- The **Systems Management Domain** encompasses the procedures, practices, methods, and software used to monitor and control the hardware and software components of the infrastructure.

### Business Architecture

A draft of the process for developing the Business Architecture has been completed and development is planned to begin early in 2004. The Business Architecture is the foundation on which the technical domains are built.

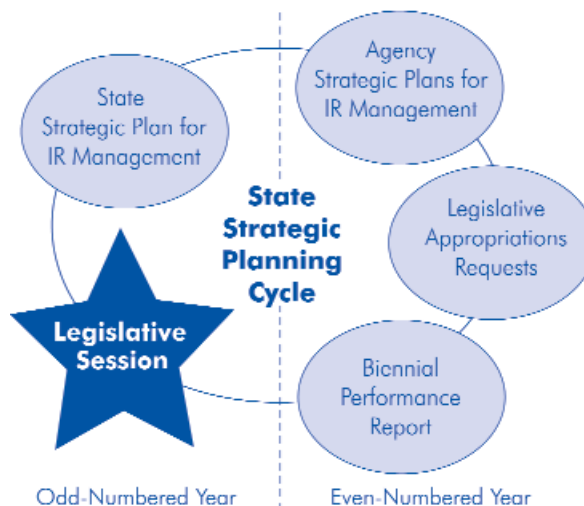
### Agency Architectures

An agency-level *toolkit* will be developed for release early in 2004. The toolkit will help agencies use ACE to develop and document their internal architectures. Figure 4 illustrates how the common statewide framework will be applied to agency architectures.

### ACE and the State Strategic Planning Cycle

DIR will work with the ACE Steering Committee throughout the strategic planning cycle and in its efforts to assess and report on the state's progress and in the development of recommendations to the DIR board, state leadership, and the legislature. The statewide strategic planning cycle is illustrated in Figure 5.

Figure 5: Statewide Strategic Planning Cycle for Information Resources Management



# development and use of the state strategic plan

## Contents of the SSP

The Information Resources Management Act requires DIR to produce a strategic plan for the statewide management of information resources every two years.

“In preparing the plan, DIR must assess and report on state agencies’ IR management practices, including interagency communication and resource sharing. The plan must also assess current and future IR management technologies and practices and their potential application to state government. Additionally, the department can report on any issue it determines is relevant to development of the plan.”<sup>16</sup>

The 78th Legislature added several requirements to the SSP, directing DIR to do the following:<sup>17</sup>

- Outline a state information architecture;
- Designate and report on critical electronic government projects to be directed by the department;
- Provide information about best practices;
- Establish reporting guidelines for state agencies to report in agency strategic plans;
- Identify major issues faced by state agencies related to the acquisition of information resources hardware, software, and services; and
- Identify priorities for ROI and cost-benefit analysis strategies.

## Focus of the SSP

Requirements in S.B. 1701 do not take effect until the next SSP. However, the clear intent of the 78th Legislature is for DIR to take a more operational role in statewide IR management. This plan attempts to provide a transition from earlier vision-based SSPs to the operational-based SSPs of the future.

Further, this plan is being developed before the state enterprise architecture is fully developed. Much of the strategic planning direction an EA would offer cannot be provided at this time. Specific guidance in technology strategies will be deferred until the next SSP. Most of the advice offered in this document concentrates on preparing agencies to participate in developing the statewide EA, developing their own agency EA, and offering guidance on how and when to use the rules, standards and guidelines that are produced from the EA process.

## Development of the SSP

### The SSP Advisory Committee

The IR Management Act requires DIR’s executive director to appoint an advisory committee to assist in preparation of the State Strategic Plan. Members of the SSP Advisory Committee must be approved by DIR’s governing board and include representation from a wide variety of stakeholders including vendors, government agencies, the legislature, and educational institutions. The composition of the committee and its terms and duties are specified in Texas Administrative Code.

The SSP Advisory Committee appointed to assist in preparing this plan convened for a one-day strategic planning session in June. Participants provided input on the vision, mission, environmental factors, guiding principles, and strategies for the plan. DIR combined its analysis of the information from the strategic planning session with research from a number of IR industry sources to determine key trends, issues, and recommendations presented in this plan. Members of this year’s SSP Advisory Committee are recognized in the Acknowledgments.

### Research

In developing this plan, DIR drew upon findings from several state and federal reports. In addition to those specifically cited, the following reports and sources were consulted.

- *Limited Government, Unlimited Opportunity: e-Texas Report*, Comptroller of Public Accounts.<sup>18</sup>
- *Special Report to the Legislature: Additional e-Texas Recommendations*, Comptroller of Public Accounts.<sup>19</sup>
- *Addressing Operating Risk and Improving the Efficiency of Texas State Government*, State Auditor's Office.<sup>20</sup>
- *Enterprise Architecture Development Tool-Kit*, National Association of State Chief Information Officers.
- *Federal Enterprise Architecture*, Federal Enterprise Architecture Program Management Office.
- State enterprise architectures from Arizona, Connecticut, Kentucky, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, and Virginia.

In even-numbered years, DIR publishes a Biennial Performance Report on state government's use of IR technologies. This report assesses statewide progress on the State Strategic Plan and agency conformance to DIR rules, standards, and guidelines. The BPR also reports major accomplishments of the state or specific state agencies in IR management and describes any major problems confronting the state or a specific state agency. Finally, the BPR summarizes the state's total expenditures for IR technologies and makes recommendations for improving the effectiveness and cost efficiency of the state's use of information resources.

The 2004 BPR will report on progress by the agencies on developing their agency architectures and the status of agency compliance with the state IR framework. Much of this data will be gathered through the Agency Strategic Plans. However, it is also anticipated that some form of agency survey will be required to gather information that the ASPs do not include.

## Use of the SSP

State agencies use the State Strategic Plan each biennium to guide development of their Agency Strategic Plans (ASPs) for Information Resources, which provide the basis for their budget requests to the legislature. These plans must be consistent with strategies of the State Strategic Plan, and with DIR rules and guidelines.

This SSP focuses primary attention on the enterprise architecture, or state-level IR framework, which is intended to guide agencies in developing their agency architectures over the next two years. The EA will also form the basis of future SSPs by prioritizing state business strategies and IR architectural elements that support the business strategies.



# progress on issues in the 2002 biennial performance report

## ISSUE 1

### E-Government Infrastructure

The state offers innovative services to the public through its award-winning Internet portal, TexasOnline. In the 2002 BPR, DIR recommended that the state reinvest its share of the gross revenue from TexasOnline back into the portal to accelerate the deployment of e-government. Due to budget constraints, no legislation was introduced to directly support this issue. However, the 78th Legislature expanded the list of agencies participating in the common occupational licensing system, allowing for the recovery of project costs.

## ISSUE 2

### Infrastructure Security

Critical state infrastructure such as electric power grids, telecommunications networks, and municipal water supplies are at risk of terrorist attack. DIR recommended that key information about infrastructure — including maps, specifications, and security reports — not be easily available. In addition, state entities should conduct background checks for prospective network and IR security staff through the Department of Public Safety (DPS).

Numerous bills were introduced during the legislative session to address information security concerns. Significant among those signed into law include the following:

- H.B. 9 centers development of homeland security strategy and coordination of homeland security activities in the governor's office and creates the Critical Infrastructure Protection Council as an advisory body to the governor.
- H.B. 1522 requires each local government to hold at least one public meeting a year to exchange information about its emergency management plan.
- H.B. 1075 removes specific limitations on the criminal history that can be sought by the numerous organizations at state and local levels that are hiring for "sensitive security positions."

- S.B. 1517 designates security personnel at commercial nuclear power plants as peace officers for the purpose of meeting federal requirements for protecting against terrorist attacks and improving the process for qualifying those security personnel.

## ISSUE 3

### Investigation and Prosecution of Computer Crime

More aggressive prosecution of computer crime is needed to deter potential criminal activity. The 2002 BPR recommended that the state's investigative and prosecutorial efforts be given higher priority to strengthen the security of state networks and information resources. H.B. 1075 addressed this issue indirectly by making it easier for agencies to conduct background checks for personnel applying for security positions. Such background checks act as deterrent to internal security breaches, the most common type of security problem.

## ISSUE 4

### Rural Access to Telecommunications Services

Statutes regulating the state's telecommunications network, TEX-AN, work at cross-purposes to the Telecommunications Infrastructure Fund (TIF) statutes, effectively preventing some citizens from obtaining services that the TIF legislation was designed to provide. In 2002, DIR recommended that statutes be modified to clarify how telecommunications services can be delivered to rural Texans through TEX-AN. The Comptroller made similar but more extensive recommendations in the *e-Texas Report*.<sup>21</sup> Concerns about rural broadband deployment were also addressed in the *House Committee on State Affairs' Interim Report to the 78th Legislature*.<sup>22</sup>

A report commissioned by the TIF Board suggested that Texas lacks a comprehensive, unified approach to providing advanced, high-speed networking across the state.<sup>23</sup> In a report to



the governor, an informal forum of broadband stakeholders expressed an interest in exploring how TEX-AN could be leveraged to permit sharing of facilities between public and private entities.<sup>24</sup>

Legislation addressing rural telecommunications deployment was introduced during the 2003 session, but was not passed. However, in the final state budget, the governor's veto eliminated the TIF Board, and their remaining funds will be used to cover the technology allotment for schools and other technology needs. It is expected that the governor will issue an executive order to create an entity to close out remaining TIF grants.

Finally, H.B. 3325 created the Community Telecommunications Alliance program to encourage public-private partnerships in Texas communities, particularly in rural regions.

#### ISSUE 5

### Disaster Recovery and Business Continuity Planning

In the event of a large, Austin-based disaster, restoration of some of the state's business units may fail due to a lack of appropriate recovery solutions for technologies. Recovering from such a disaster will be difficult unless clear recovery priorities are established at a statewide level. No legislation was introduced on this matter during the 2003 session to resolve this issue. However, disaster recovery planning and business continuity planning are key areas addressed through DIR's ACE initiative.

#### ISSUE 6

### Consolidation of IR Management for Small Agencies

In the 2002 BPR, DIR reported that many small agencies could not afford a full-time IR support staff. As a result, such agencies may be better served by consolidating their IR needs under a single service provider. In addition to managing

core IR functions, a service provider could function as information resources manager for the agencies, performing IR planning and acting as liaison between the agencies and the legislature.

The Comptroller and State Auditor made similar recommendations in separate reports to the legislature; however, legislation introduced to implement the Auditor's recommendations did not pass.<sup>25,26</sup> IR management in small agencies will be addressed through the ACE initiative.

#### ISSUE 7

### Electronic Records Management

Managing e-mail is one of the most difficult challenges facing public and private organizations. Administrators of e-mail systems often do not have tools or training to manage e-mail as official government records. As reported in the 2002 BPR, the volume of electronic information continues to increase and the number and size of e-mail messages are predicted to rise at a compounded annual growth rate of 40 percent through 2005. Aggressive, immediate action is required to bring the management of e-mail into compliance with records management standards, and to provide a common framework and facilities for long-term archival of all state e-mail records.

The 78th Legislature expanded the membership of the Record Management Interagency Coordinating Council to include a faculty member from a public senior college or university and two information resource managers for state agencies in the executive branch of government. The law also specifies that the council's permanent member agencies will provide staff for the council.

The council is responsible for addressing these issues and will develop strategies for them in cooperation with the ACE initiative.

# statewide information resources projects and initiatives

The overall success of enterprise-wide IR management is measured by the extent of agency involvement in one or more of the major IR projects and initiatives currently underway to transform how state government delivers services. Current projects and initiatives are listed under two broad categories — *Technology Serving Texas Citizens* and *Technology Serving Public Agencies*. Brief descriptions of each project or initiative follow, in alphabetical order.

## Technology Serving Texas Citizens

A major role of government is to provide services to its citizenry. These projects and initiatives deliver services to directly benefit the citizens of Texas.

- **Developing Access to Government Information**
  - TexasOnline Authority
  - Texas Records and Information Locator
- **Facilitating Public Interaction Online**
  - Open Records Steering Committee
  - Public Electronic Services On-the-Internet
  - Texas Integrated Eligibility Redesign System
  - TexasOnline Authority
- **Providing Security and Privacy**
  - Critical Infrastructure Protection Council
  - Infrastructure Target Identification Project and Emergency Response Program
  - Information Security Advisory Work Group

## Technology Serving Texas Agencies

For government to serve its constituents in the most efficient and cost-effective manner, it must have a well-developed infrastructure. The following projects and initiatives provide public agencies with guidance and assistance to create, maintain, and improve their IT infrastructures.

- **Ensuring Secure, Continuous Government Services**
  - ACE: Architecture Components for the Enterprise
  - State Data Center
  - Information Security Advisory Work Group
- **Improving Business Processes across Agencies**
  - ACE: Architecture Components for the Enterprise
  - County Information Resources Agency
  - eProcurement Advisory Committee
  - State Data Center
  - Telecommunications Planning and Oversight Council
  - Texas Geographic Information Council
  - TexasOnline Authority
- **Ensuring Longevity, Integrity, and Accessibility**
  - ACE: Architecture Components for the Enterprise
  - Electronic Depository Project
  - Information Security Advisory Work Group
  - National Data Interchange Standards Task Force
  - Records Management Interagency Coordinating Council

## Description of Projects and Initiatives

### ACE: Architectural Components for the Enterprise

ACE is a collaborative, interagency initiative sponsored by DIR to develop an enterprise architecture for state government. The basic principle of enterprise architecture is to align technology choices made by IR management with the business needs of the state. The ACE initiative will build a state framework to enable agencies to optimize their use of information resources based on their business needs. A state enterprise architecture also allows for more effective technology resource planning and increases possibilities for cross-agency collaboration.

ACE will form an integral part of the foundation for future state and agency strategic planning efforts. The initiative will aid state leadership to identify and prioritize the state's business goals and align IR strategies and projects to achieve those goals.

#### **County Information Resources Agency**

The County Information Resources Agency (CIRA) is an interlocal government agency with members from more than 205 counties and one council of government. CIRA, administered by the Texas Association of Counties, provides its members with central, cooperative assistance and services relating to IR matters for the betterment of county government. CIRA is a participant in the Integrated Justice Information System initiative, the Texas Geographic Information Council, and is partnering with the Office of Court Administration and DIR to bring high-speed Internet connectivity to county, district, and justice courts.

#### **Critical Infrastructure Protection Council**

The 78th Legislature required the governor to "direct homeland security in this state and develop a statewide homeland security strategy that improves the state's ability to detect and deter threats to homeland security, respond to homeland security emergencies, and recover from homeland security emergencies."<sup>27</sup>

As part of that strategy, the Critical Infrastructure Protection Council was formed to act as an advisory entity to the governor in the development and coordination of a statewide critical infrastructure protection strategy; the implementation of the governor's homeland security strategy by state and local agencies and provide specific suggestions for helping those agencies implement the strategy; and other matters related to the planning, development, coordination, and implementation of initiatives to promote the governor's homeland security strategy. The council will also prepare an annual report detailing the progress and recommendations of development and implementations of the statewide strategy.

#### **Electronic Depository Project**

The Texas State Library and Archives Commission, in partnership with the University of North Texas, implemented a depository program to store non-current electronic state publications indefinitely. The depository came online in August 2003. Electronic publications are collected monthly from all state agency Web sites — except those of universities, colleges, or community colleges — and stored on the depository server. By downloading, dating, indexing, and storing online government publications, the Electronic Depository Project preserves government records and makes them accessible for future generations.

#### **eProcurement Advisory Committee**

The eProcurement Advisory Committee is the body replacing the Texas Government to Business Coordinating Council. The role of the committee is to provide guidance for the statewide eProcurement project, participate in issue resolution, and actively champion the project. The committee assisted DIR and the Texas Building and Procurement Commission with defining the requirements for a statewide, Web-based electronic procurement system. The committee is currently assisting in the evaluation of vendors to implement the eProcurement System. Once a vendor is selected, the committee will continue to participate in an advisory role during the implementation of the eProcurement System. Twelve state agencies and universities currently serve on the committee, five of which also serve on the evaluation committee.

#### **Infrastructure Target Identification Project and Emergency Response Program**

In fiscal 2003, DPS's Division of Emergency Management (DEM) created the Infrastructure Target Identification Project Committee to ensure a unified strategy to comprehensively assess the vulnerabilities of key resources and critical infrastructure in Texas; identify priorities and protective and support measures by the DEM; and develop a comprehensive state plan for securing the key resources and critical infrastructure.

Each agency on the committee is providing listings of its key resources and critical infrastructure that can be employed for any type of emergency including natural and terrorism disasters. TGIC and DIR are partnering with DEM to assist in the development of a Geographic Information System database to identify critical assets by regions within the state.

### **Information Security Advisory Work Group**

The Information Security Advisory Work Group is composed mostly of chief security officers representing agencies from all major functions of state government. The work group provides input and feedback on security issues and the activities of DIR's Security Office.

### **National Data Interchange Standards Task Force**

All health care agencies are required to implement national standards for electronic processing of health care and health payment information in relation to the federal Health Insurance Portability and Accountability Act (HIPAA) and its subsequent amendments. The National Data Interchange Standards Task Force is charged with developing a coordinated strategy for implementing these standards. The Health and Human Services Commission has established a HIPAA Program Management Office to coordinate implementation activities among the impacted agencies.

### **Open Records Steering Committee**

The Open Records Steering Committee advises the Texas Building and Procurement Commission in its duties under the Public Information Act. These duties include minimizing agencies' reporting burdens and determining the cost-effectiveness of making information available to the public electronically. Committee members represent the public, municipalities, counties, school districts, and state agencies.

### **Public Electronic Services On-the-Internet**

The Public Electronic Services On-the-Internet (PESO) Working Group provides a forum for state Web site administrators and developers to address policy and technology issues related to improving access to government information and services via the Internet. The working group provides comments and input on new guidelines and standards being developed by DIR and serves as an educational forum on issues affecting all agencies (e.g., accessibility).

### **Records Management Interagency Coordinating Council**

The Records Management Interagency Coordinating Council studies records management issues affecting the state and adopts policies to improve the state's management of records. Its mission is to coordinate the management of government records by making recommendations to improve processes and accountability, to facilitate the transition from paper to electronic records, and to develop consistent practices in state agencies. The 78th Legislature, through S.B. 394, expanded the membership of the council to include a faculty member from a public college or university and two agency IRMs from the executive branch.<sup>28</sup>

### **State Data Center**

The State Data Center, formerly known as the West Texas Disaster Recovery and Operations Center, was established by DIR in partnership with Angelo State University (ASU). Located on the ASU campus in San Angelo, the center provides opportunities to consolidate state agency processing, enabling economies of scale and guaranteed service levels. Disaster recovery services for state and local governments are also offered through the center's outsourced contract. The center has played an important role in reducing IT costs for state agencies. Seven agencies have migrated their mainframe processing to the center. Several other agencies have implemented new processes, and the center houses the servers that support TexasOnline. Many more agencies are expected to migrate to the State Data Center over the next biennium and beyond as a result of laws enacted by the 78th Legislature.

### Telecommunications Planning and Oversight Council

The 77th Legislature created the council to replace the Telecommunications Planning Group. Council members represent state agencies, universities, public school districts, local governments, and the public. The council performs strategic and operational planning for the statewide telecommunications network. It develops the functional requirements, service objectives, and performance measures for telecommunications services offered over the network and executes contracts with telecommunications service providers. The council reports biennially to the legislature and annually to the DIR board and telecommunications network customers.

### Texas Geographic Information Council

The Texas Geographic Information Council (TGIC) plans and coordinates the acquisition and use of geospatial mapping data in state government. TGIC advises DIR on geospatial standards and policies that ensure the state's investment in this technology yields the greatest possible benefits. TGIC advises the Texas Water Development Board (TWDB) on the development and maintenance of the state's common digital base map and on the centralized geospatial data services provided through TWDB's Texas Natural Resources Information System.

TGIC increasingly collaborates with local governments and federal agencies to leverage the state's common geospatial mapping needs. A current focus is the development of an efficient framework to create, maintain, and share data on critical infrastructures to provide near real-time mapping and analysis support for the state's homeland security and emergency management programs. TGIC reports biennially to the legislature on the state's current and planned investments in GIS technology. The current report, *Digital Texas*, is available online.<sup>29</sup>

### Texas Integrated Eligibility Redesign System

The Texas Integrated Eligibility Redesign System (TIERS) encompasses 55 Department of Human Services (DHS) assistance programs. The TIERS project is overseen by the Health and Human Services Commission, Office of the Attorney General, Legislative Budget Board, and DIR. The Department of Health and the Texas Workforce Commission participate in an adjunctive capacity. TIERS will replace the DHS System for Application, Verification, Eligibility, Referrals, and Reporting, which supports more than 50 assistance programs. The project will also improve existing business processes through the expansion of change centers and fraud prevention tools.

### TexasOnline Authority

TexasOnline, the state's official Internet portal, allows state and local governments to electronically send and receive documents and payments to and from the public. The TexasOnline Authority — whose members are appointed by the governor and represent state agencies, local governments, rural areas, businesses, and the public — oversees the portal. The Authority develops policies, prepares rules, considers services to be provided on TexasOnline, operates and promotes the portal, manages contract performance, oversees money generated for operation and expansion, and provides updates to state leadership.

### Texas Records and Information Locator

The Texas State Library and Archives Commission's TRAIL (Texas Records and Information Locator) system allows citizens to locate online government publications by searching for keywords, agency names, publication types, and subject headings. Agencies cooperate by including publication information in a standard format on agency Web pages, enabling the system to automatically collect and index the information.

# Information resources statutes, rules and guidelines

The Information Resources Management Act (IRMA) created DIR to coordinate and direct the use of information resources technologies by state agencies in order to provide the most cost-effective and useful retrieval and exchange of information. To this end, IRMA requires DIR to monitor national and international standards and to develop and publish rules and guidelines relating to information resources management by state agencies.

Standards are publicly available specifications of hardware and software components resulting from formal agreements by recognized national, international and industry bodies. DIR may adopt a standard or part of standard as a rule or as a guideline; or it may integrate additional material with a standard to create a rule or guideline that best meets the needs of the state.

## Statutes and Administrative Rules

Some instructions to agencies relating to IR management are by statute, encoded in state law. Other instructions are embodied as state administrative rules. Instructions from either category — by statute or by administrative rule — require state agency compliance unless specifically exempted by law, rule language, or a formal waiver process.

Administrative rules establish standard policies and procedures with which agencies must comply. IRMA gives DIR administrative rulemaking authority in the area of state information resources management. Texas Administrative Code defines a formal DIR rulemaking process, which includes a required public comment period. Rules adopted by DIR become part of the Texas Administrative Code. DIR regularly reviews all rules to determine whether they should be modified, repealed, or continue unchanged.

## Guidelines

The process for developing IR guidelines is less formal than for administrative rules. Guidelines are published as recommended instructions or best practices to help agencies make the best IR technology decisions in support of their missions. Implementation of these voluntary guidelines can improve various aspects of an agency's IR infrastructure, including its reliability, interoperability, security, cost-effectiveness, and management.

DIR may publish a standard or procedure as a guideline, as opposed to an administrative rule, for several reasons: it may involve an emerging technology, it may present significant implementation barriers to some agencies, it may not be applicable to many agencies, or it may already have a high level of compliance and does not require enforcement. Some guidelines provide advice on implementing a standard that has been adopted by administrative rule. In some cases, a standard may be initially adopted as a guideline, and later elevated to an administrative rule.

## Architecture Components for the Enterprise

DIR depends heavily on input from stakeholders when developing IR rules and guidelines. ACE, the state's new enterprise architecture initiative, provides new opportunities for stakeholder participation. The statewide IR framework that emerges through the ACE initiative will be based on agency input, industry standards, best practices, and DIR rules and guidelines. Ongoing efforts through the ACE initiative to simplify and homogenize the state's IR infrastructure will illuminate IR rules and guidelines that must be developed, refined, or retired.

## IR Statutes, Rules and Guidelines

This section identifies existing state IR statutes, rules, and guidelines by category. DIR publishes links to these items and to a compliance checklist for agency IRMs online at <[www.dir.state.tx.us/ace/texas/](http://www.dir.state.tx.us/ace/texas/)>.

### DIGITAL SIGNATURES

	SOURCE	REFERENCE
Electronic Signatures	Tex. Admin. Rule	1 TAC 201.14
Electronic Signatures and Certificate Authority	Guideline – DIR	SRRPUB 13

### DATA INTERCHANGE AND SHARING

Geographic Information Systems	Tex. Admin. Rule	1 TAC 201.6
Charges for Copies of Public Records	Tex. Admin. Rule	1 TAC 201.15
E-Mail and Document Interchange	Guideline – DIR	SRRPUB 12
Extensible Markup Language	Guideline – DIR	SRRPUB 15

### ELECTRONIC RECORDS

E-Mail Record Management	Tex. Admin. Rule	13 TAC 6.91-6.96
E-Mail Policy Model for State Agencies	Guideline – TSLAC	
Functional Requirements for Electronic Records	Guideline – TSLAC	
E-Mail and Document Interchange	Guideline – DIR	SRRPUB 12

### HARDWARE AND SOFTWARE

Software Portfolio Management	Tex. Gov't Code	§2054.121-123
Software License Management Templates	Guideline – DIR	
Commodity Software Purchases	Tex. Gov't Code	§2157.068
Commodity Software Purchases	Tex. Admin. Rule	1 TAC 201.18
Commodity Software Purchases	Guideline – DIR	
Sale or Transfer of Computers and Software	Guideline – DIR	SRRPUB 6
Consideration of Open Source Solutions	Guideline – DIR	SRRPUB 9

### INFORMATION SECURITY

Security Standards	Tex. Admin. Rule	1 TAC 202.2
Management and Staff Responsibilities	Tex. Admin. Rule	1 TAC 202.3
Risk Management	Tex. Admin. Rule	1 TAC 202.4
Physical Security	Tex. Admin. Rule	1 TAC 202.5
Business Continuity Planning	Tex. Admin. Rule	1 TAC 202.6
Security Safeguards	Tex. Admin. Rule	1 TAC 202.7
User Security Practices	Tex. Admin. Rule	1 TAC 202.8
Establishing an Information Security Policy	Guideline – DIR	Online Publication
Agency Security Policy Templates	Guideline – DIR	Online Publication
Identifying Critical Information Assets and Risks	Guideline – DIR	Online Publication
Tools and Practices for Critical Information Asset Protection	Guideline – DIR	Online Publication
Security Incident Planning	Guideline – DIR	Online Publication
Business Continuity Planning Guidelines	Guideline – DIR	Online Publication

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### INTERNET/WEB

State Web Sites	Tex. Admin. Rule	1 TAC 206
IP Address Management	Guideline – DIR	SRRPUB 3
Personal Use of Internet and E-Mail	Guideline – DIR	SRRPUB 4
Internet Domain Names	Guideline – DIR	SRRPUB 7
Internet E-Mail Personal Naming Convention	Guideline – DIR	SRRPUB 10
Web Design and Coding	Guideline – DIR	SRRPUB 11
Unsolicited Bulk E-Mail	Guideline – DIR	SRRPUB 14

### IR MANAGEMENT

Adoption of IR Standards and Policies	Tex. Admin. Rule	1 TAC 201.11
Agency Internal Quality Assurance Guidelines	Tex. Admin. Rule	1 TAC 201.19
Agency Internal Quality Assurance Guidelines	Guideline – DIR	
Interagency IR Contracts	Tex. Admin. Rule	1 TAC 201.7
Roles and Preferred Skills for Agency IRMs	Guideline – DIR	
Continuing Education for Agency IRMs	Tex. Gov't Code	§2054.076
E-Government Program Management	Tex. Gov't Code	§2055
Information Architecture	Guideline – DIR	ACE Initiative

### STATEWIDE NETWORK

Communications Wiring	Tex. Admin. Rule	1 TAC 208
Statewide Network	Guideline – DIR	SRRPUB 1
Building and Campus Wiring	Guideline – DIR	SRRPUB 2
Directory and Locator Services	Guideline – DIR	SRRPUB 8

### TELECOMMUNICATIONS

Telecommunications Services	Tex. Admin. Rule	1 TAC 207
Videoconferencing	Tex. Admin. Rule	1 TAC 209
Videoconferencing	Guideline – DIR	SRRPUB 5

### TEXASONLINE

TexasOnline	Tex. Gov't Code	§2054.251-267
Use of TexasOnline	Tex. Gov't Code	§2055.103
TexasOnline	Tex. Admin. Rule	1 TAC 210



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